

DOCUMENT RESUME

ED 228 532

CE 035 726

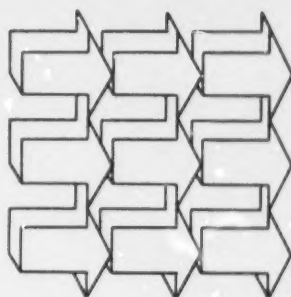
AUTHOR Ashmore, M. Catherine; Pritz, Sandra G.
TITLE Managing the Finances. PACE Revised. Level 3. Unit 16. Research & Development Series No. 240CB16.
INSTITUTION Ohio State Univ., Columbus. National Center for Research in Vocational Education.
SPONS AGENCY Office of Vocational and Adult Education (ED), Washington, DC.
PUB DATE 83
CONTRACT 300-78-0032
NOTE 25p.; For related documents, see CE 035 672-729.
AVAILABLE FROM National Center Publications, Box F, The Ohio State University, 1960 Kenny Road, Columbus, OH 43210 (Complete set--\$120.00; individual levels--\$45.00 each; instructors' guides--\$14.50 each; resource guide--\$7.95; module sets--\$35.00 each level; individual modules--\$2.50 each).
PUB TYPE Guides - Classroom Use - Materials (For Learner) (051)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Adult Education; Behavioral Objectives; Business Administration; *Business Education; Career Choice; Competency Based Education; Computer Oriented Programs; Costs; *Entrepreneurship; Individualized Instruction; Learning Activities; Learning Modules; Microcomputers; *Money Management; Postsecondary Education; Retraining; *Small Businesses; Units of Study
IDENTIFIERS *Balance Sheet Technique; *Program for Acquiring Competence Entrepreneurship

ABSTRACT

This individualized, competency-based unit on managing finances, the 16th of 18 modules, is on the third level of the revised Program for Acquiring Competence in Entrepreneurship (PACE). Intended for the advanced secondary and postsecondary levels and for adults wanting training or retraining, this unit, together with the other materials at this level, emphasizes the actual application of a business plan. Ten competencies are dealt with in this instructional unit, including (1) explaining the importance of cash flow management, (2) identifying financial control procedures, (3) describing how to find cash flow patterns, (4) analyzing trouble spots in financial management, (5) describing how to prepare an owner's equity financial statement, (6) describing how to compute various financial ratios, (7) analyzing financial management ratios applicable to small businesses, (8) identifying the components of break-even analysis, (9) computing and analyzing break-even point problems, and (10) reviewing microcomputer applications for financial management. Materials provided include objectives, preparation information, an overview, content (with questions in margins that guide the students' reading), activities, assessment forms, and notes and sources. The unit requires using approximately 3 hours of class time. (YLB)

PACE
REVISED

Program for
Acquiring
Competence in
Entrepreneurship



☐ Level 1

☐ Level 2

☒ Level 3

Managing the Finances

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)

This document has been reproduced as
received from the person or organization
originating it.

Minor changes have been made to improve
reproduction quality.

Points of view or opinions stated in this docu-
ment do not necessarily represent official NIE
position or policy.

Developed by M. Catherine Ashmore and Sandra G. Pritz

You will be able to:

- Explain the importance of cash flow management.
- Identify financial control procedures.
- Describe how to find cash flow patterns.
- Analyze trouble spots in financial management.
- Describe how to prepare an owner's equity financial statement.
- Describe how to compute various financial ratios.
- Analyze financial management ratios applicable to a small business.
- Identify the components of break-even analysis.
- Compute and analyze break-even point problems.
- Review microcomputer applications for financial management.

ED228532

CF 035726

BEFORE YOU BEGIN . . .

1. Consult the *Resource Guide* for instructions if this is your first PACE unit.
2. Read the Unit Objectives on the front cover. If you think you can meet these objectives now, consult your instructor.
3. These objectives were met at Levels 1 and 2:

Level 1 -

- Explain the importance of financial management.
- Describe the components of a balance sheet.
- Differentiate between current and fixed assets-current and fixed liabilities.
- Describe the components of a profit and loss statement.
- Identify methods for calculating selected financial ratios.
- Identify sources of financial ratio data.
- Identify the activities associated with electronic data processing and financial analysis.

Level 2 -

- Identify various components of balance sheet reports.
- Identify terms/concepts commonly used on small business balance sheets.
- Identify various components of profit and loss statements.
- Analyze uses of various depreciation schedules.
- Describe how to prepare cash forecast.

If you feel unsure about any of these topics, ask your instructor for materials to review them.

4. Look for these business terms as you read this unit. If you need help with their meanings, turn to the Glossary in the *Resource Guide*.

acid-test ratio
break-even point
cash flow
current ratio
fixed costs
net income to net sales ratio

net sales to working capital ratio
operating expense ratios
owner's equity financial statement
semivariable costs
variable costs

MANAGING THE FINANCES

WHAT IS THIS UNIT ABOUT?

To operate your business successfully, you will have to be able to use financial management techniques. A key concept of financial management is balance and control. A command of the tools and techniques of financial management will help you exercise this needed balance and control.

The requirements for success in financial management include:

- Proper balance of investments in assets such as a building, fixtures, and other equipment,
- Accurate determination of cash flow needs,
- Sound management of both short-term and long-term debts,
- Sound credit terms and practices for selling on credit,
- A reasonable appraisal of whether or not you are realizing an adequate rate of return on your investment, based on the amount invested in your business and the time you devote to it.

This unit assumes that you have an understanding of the basic components and organization of a balance sheet and profit and loss statement. As you may know, a balance sheet is a periodic report that identifies various assets and liabilities. The net worth or equity of the owner or stockholders is determined from the balance sheet formula: $\text{assets} - \text{liabilities} = \text{net worth (equity)}$. The profit and loss statement identifies revenues and expenses to determine a profit or loss. Detailed explanations of both statements are available in Levels 1 and 2 of this unit. Ask your instructor for additional information.

WHY IS CASH FLOW MANAGEMENT IMPORTANT?

Cash is a problem for many small marketers. Comments such as "I never seem to have enough cash. Often I have to slight one creditor to pay another," are not uncommon for owners of small businesses.

The secret of controlling cash can be stated in one word—balance. A firm should aim to have just the right amount of cash on hand—never too little and never too much for its needs.

When a business has permanent pressure on cash, it may be undercapitalized. A business would be undercapitalized if it does not have enough funds to pay current operating expenses or to purchase needed inventory or equipment. Such a chronic shortage of cash can lead to disaster because the owner can't pay the firm's bills when they are due. Or the firm may go broke because its owner lacks the financial resources to meet the sudden demands of new competition.

Often, more capital is needed because the present investment does not generate enough cash to keep the business financially healthy.



Control of cash involves two options. The first is having the right amount of cash on hand to pay bills. The second is using any excess cash wisely. Financial control, the day-to-day and month-by-month accounting, governs these two. An accounting system tells you how much money you have available, how much you need to pay your bills, and whether there is either a deficit to be made up or a surplus to be invested. In the latter case, you may sometimes have to take prudent risks—as do all successful business owners—in order to make your cash balances produce income.

WHAT ARE SOME FINANCIAL CONTROL PROCEDURES?

Keeping track of the cash received by your business requires two things: (1) procedures and records that will help you to safeguard the funds, and (2) attention to the details necessary to keep those procedures working. The following guidelines may be helpful as you assess your situation. Your goal should be to keep good records and to control your cash.

- Handle business cash as though it belonged to someone else. This is vital to the success of your business, especially when your cash is limited.
- Keep personal cash separate from cash generated by your business. One way to do this is by paying yourself a weekly or monthly salary.
- Keep a record of all incoming cash. The record can be simple, showing you (1) the amount of cash, (2) the date received, and (3) the source.
- Use a bank account for your business funds.
- Deposit all cash receipts in your firm's bank account.
- Never make a disbursement out of your daily cash receipts.

- Deposit each day's cash receipts on a daily basis.
- Pay all bills, if possible, with checks. Checks provide a record and serve as a control.
- Use a petty cash fund if you need to pay some small bills in coin and currency. This fund should be a fixed amount and balanced regularly. Get a properly signed receipt when making a payment from the petty cash fund. Reimburse your petty cash fund with a check which notes, for example, "to cover cash used in paying receipts numbered 21, 22, and 23."
- Make disbursements only if you have (1) a supplier's invoice or (2) a receipted paid-out voucher which is dated and signed by the person to whom you give the check (or cash if it's a petty cash expense). Keep your records simple. In a busy schedule, you will be more apt to refer to your records if they are easy to use. Sometimes have your procedures and controls checked by your accountant or an employee to see that they are working effectively.

HOW CAN A CASH FLOW PATTERN BE DETERMINED?

Financial control can provide you with important information. Your concern is keeping your business healthy by (1) obtaining funds when there are cash deficits and (2) managing cash surpluses wisely. Here, you are working with dynamic situations, ones that change from month to month.

Before you can use your cash balances efficiently, you must know your firm's cash flow pattern. You need answers to the following questions. How much cash comes into your business each month? How much goes out? Is any left at the end of the month? If so, how much?

You can get answers to these questions by looking at present and past records that give you "book control" of cash. See what they tell you about your past cash-flow pattern. You'll need to use a budgeting technique. You may want to ask your accountant or bookkeeper to work out the details for you.

One simple budget technique involves (1) adding estimates of income expected during the next month to the cash balance at the beginning of the present month and (2) subtracting estimates of expenses for the next month. When this is done for twelve months, you know expected cash balances for each month.

This information will help you to forecast the future. Review your cash records for last year to find, on a monthly basis—

- where your cash came from,
- where it went, and
- how much was left at the end of each month.

Suppose, for example, that your accounting year starts with January. To the cash balance on hand on December 31, for example (\$1,560), add the following income items:

- All payments from customers both against accounts receivable and as cash sales;
- Any money received as a loan from a bank or other source;
- Additional capital invested in the business; and
- All payments received from sale of fixed assets.

The January income items amounted to a total of \$3,000, total available cash in January was \$4,560 (\$1,560 plus \$3,000).

The next step is to subtract January expense items from the \$4,560. Subtract the following:

- All payments made against accounts payable;
- All expenses paid (not merely accrued);
- All cash withdrawals by the owner;
- All repayment of loans; and
- All payments for fixed assets.

Suppose that these expenses totaled \$2,800. Thus your cash balance at the end of last January was \$1,760 (\$4,560 minus \$2,800).

This \$1,760 was your cash on hand at the start of last February. Repeat the process of adding cash income for that February and subtracting cash paid out in order to get your cash balance at the end of February. Do the same for each of the twelve months in that year.

As a final step (1) underestimate cash receipts by 5 percent and (2) overestimate cash payments by 5 percent. This provides a 10 percent margin for unforeseen deficits.

WHAT ARE SIGNS OF TROUBLE IN FINANCIAL MANAGEMENT?

Determining last year's cash balances by months should give you an idea of the cash flow pattern for your business. However, before trying to predict your cash balances for each month of next year, look again at your records.

This review is to check for trouble spots in last year's operation. For example, were there months when—

- expenses were greater than the gross profits you made from sales?
- cash was inadequate at the start of the month?

- the business overexpanded without new capital being made available?
- excessively high accounts receivable were not discounted at the bank?
- cash was reduced below an adequate balance because you had to buy fixed assets—such as new equipment—that are recoverable only through depreciation?

Some of these conditions can be caused by seasonal fluctuations. One way to avoid them is through short-term borrowing.

HOW CAN LONG-RANGE FINANCIAL NEEDS BE MANAGED?

Before you start to plan how you will improve your control of future cash, take time to list the long-range needs of your firm. List items such as—

- equipment, tools, and other fixed or depreciating assets which will need to be replaced;
- additional equipment or other fixed assets that you may need in order to compete successfully;
- remodeling or expansion of your facilities that may be needed to increase sales.

You need to have an idea of these long-range requirements so you can provide for them without depleting your cash. Some retailers fail, for example, to depreciate their fixed assets and set up financial reserves for their replacement. Thus, they must use their cash balances—funds for paying the firm's day-to-day bills—to pay for the replacement of worn-out equipment.

Such a situation can be avoided by planning—that is, by trying to chart the course of your business for the next year to five years. In addition to budgeting for the short-range needs, as will be discussed the next section, you should make a tentative plan for handling your firm's long-range needs.

WHAT IS AN OWNER'S FINANCIAL STATEMENT?

An important financial statement related to cash flow and financial management is *change in owner's equity schedule*. The change in the owner's equity statement reflects those items that change the owner's net worth (the amount of capital or funds invested by the owner of the business). This schedule includes the owner's withdrawal (salary).

Other adjustments indicated on this financial statement are additional investments by the owner of the business or possibly an adjustment for the depreciation value of equipment and building. It is important to remember that additional capital may be needed to keep the business in operation. These changes will be reflected in the change in owner's equity financial statements. They should also be considered as an integral part of the firm's operating records. Table 1 shows an example of a schedule that reflects a statement of the proprietor's capital and any changes in the owner's equity.

TABLE 1

**STATEMENT OF CHANGE IN OWNER'S EQUITY
YEAR ENDING DECEMBER 31, 19 _____**

J. Q. Entrepreneur, capital, January 1, 19 _____		<u>\$251,000</u>
Additions		
Net profit	30,000	
Additional capital distribution	<u>\$10,000</u>	<u>40,000</u>
	\$40,000	
Deductions		
Withdrawals for 19 _____		
income taxes	\$10,000	
J. Q. Entrepreneur's salary	20,000	
Depreciation in value of store property	<u>20,000</u>	<u>\$ 50,000</u>
	50,000	
J. Q. Entrepreneur's capital, December 31, 19 _____		<u>\$241,000</u>

**HOW ARE FINANCIAL STATE-
MENTS ANALYZED?**

Various financial reports can be helpful in financial management. The principal ones are the balance sheet and the profit and loss statement. They are the basis for financial analyses of your firm. Financial statement analysis is a control method in which information from both the balance sheet and profit and loss statement is examined and relationships among items are established and compared.

Information from current and projected statements can be analyzed in the same way. These comparative measures (stated as ratios) answer questions such as: Can the business pay its bills on time? Is the money invested in the firm bringing you as much profit as it could? Careful financial analyses not only help you in assessing the firm's financial condition but also can assist you in making sound management decisions.

As you continue working with financial information in this unit, keep in mind the fact that today many small business owners use microcomputers to help them manage finances. A section on microcomputers in business is included at the end of this unit.

**WHAT ARE OPERATING
EXPENSE RATIOS?**

An *operating expense ratio* helps business owners gain valuable management information by separately dividing each operating expense, such as salaries or wages, by net sales. From the resulting

picture, owners can evaluate the relationship of various expenses to net sales. Trends of specific expenses to net sales can be analyzed in terms of monthly or seasonal changes.

$$\text{Operating Expense Ratio} = \frac{\text{Any Operating Expense}}{\text{Net Sales}} \times 100$$

WHAT IS AN INVENTORY RATIO?

The *inventory ratio* compares "costs of goods sold" to average inventory. The average inventory is the amount of inventory a business normally has in stock at a certain time. It is often computed by averaging the beginning and ending inventory. An inventory turn is how many times the average inventory on hand is sold in a given period of time. This ratio tells you how fast your merchandise is being sold. The formula showing inventory turnover is:

$$\text{Inventory Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Average Inventory}} = \frac{\text{Number of Times an Average Inventory is Sold or Turns in a Stated Time Period}}{1}$$

A study of turnover rates in similar businesses will help you determine the appropriate rate for your business. Usually, a fairly high ratio indicates that your inventory is current and saleable and that your firm has good pricing policies. An extremely high ratio may indicate that your inventory turns over too often—this may lead to shortages and customer dissatisfaction.

WHY ARE FINANCIAL RATIOS USEFUL?

Financial ratios make it possible for you to compare your firm's performance with the average performance of similar businesses. However, you must remember that—

- all businesses are not exactly comparable. There are different ways of computing and recording financial data on financial statements. Therefore, there may not be exact points of comparison; that is, figures for your business may not exactly compare to those for a business whose figures are computed or recorded in a different manner.
- ratios are computed for specific dates. Unless your financial statements are prepared often, the most recent data for your firm may be wasted by not being used for ratio analysis.
- financial statements show what has happened in the past. One of the best uses of a ratio is to give you clues about future problems and opportunities. Since ratios are based on past performance, you will need your management skills to predict the future.

WHAT ARE THE KEY BUSINESS RATIOS?

The four "key" business ratios include:

- current ratio;

- acid-test ratio;
- debt to tangible net worth;
- inventory ratio.

WHAT IS THE CURRENT RATIO?

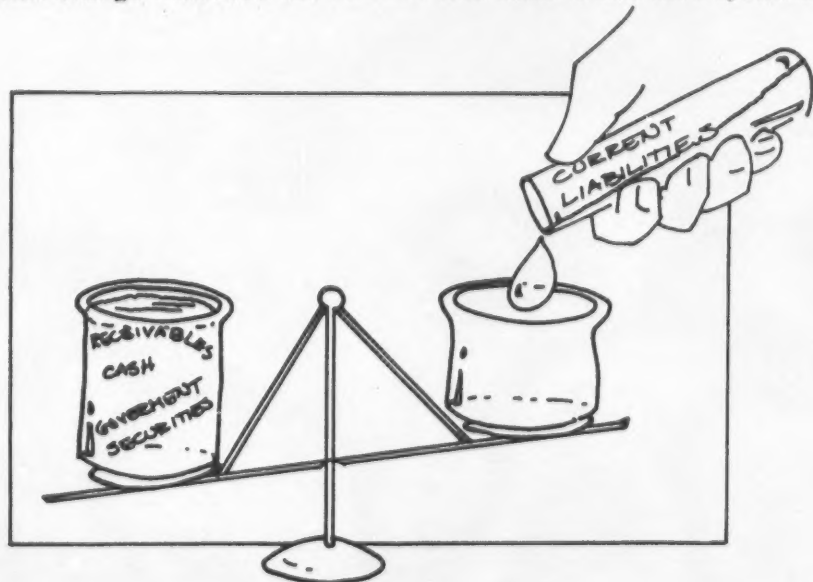
The *current ratio* is one of the most commonly used measures of a firm's financial strength. The question it answers is: Does your firm have enough current assets to meet its current debts with a margin of safety for possible losses (such as inventory pilferage or uncollectable accounts)?

The current ratio is current assets divided by current liabilities. The ratio should be at least two to one, assets to liabilities. This gives an ample margin for eventual payment of current debts. Compute the current ratio with this formula:

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

There is a difference between current ratio and *working capital*. Working capital represents the amount of current assets minus the amount of current liabilities; in other words, the cash that is available for discretionary use. When computing working capital, remember that your inventory may be highly seasonal, thus making it easy to overstate your working capital. Usually your liabilities are items due within one year. Payment cannot be postponed. It is your current assets that are subject to analysis. Examine them carefully before computing the final figure.

If a substantial amount of your working capital is tied up in accounts receivable, you may want to consider accepting national and bank credit card purchases if you are not doing so. This would partially reduce your accounts receivable. However, there is usually a 3 to 5 percent charge when you use national and bank credit card systems.



**WHAT IS AN ACID-TEST
RATIO?**

A more accurate ratio to measure the debt-paying ability of a business is the *acid-test ratio*. The acid-test ratio uses only cash and accounts receivable as current assets. In other words, inventory has been removed from the current assets and the ratio calculated is the adjusted current ratio. This ratio should be one to one.

The acid-test ratio is computed with this formula:

$$\text{Acid-Test Ratio} = \frac{\text{Cash} + \text{Receivables} + \text{Government Securities}}{\text{Current Liabilities}}$$

This ratio will show if you have enough in cash and accounts receivable to pay all your current liabilities at any one time. It answers the question: If all cash income from sales were to stop, could the firm meet its current debts with readily available funds?

**WHAT IS A DEBT-TO-
TANGIBLE NET-WORTH
RATIO?**

The *debt-to-tangible-net-worth ratio* is another "key" ratio. Debt, of course, means *all* debts, current and long-term. Tangible net worth is the worth of a business minus any intangible assets such as goodwill, trademarks, patents, copyrights, or franchise fees that have an indeterminable value. Goodwill, for example, is the value of earning power acquired over a period of time. For a new business, its value is especially vague; it should not be included in a ratio that compares what the firm owes to what it owns.

If the ratio of debt to tangible net worth is greater than one to one, then the business is undercapitalized. Debt should be reduced or additional capital should be invested. A lender, such as a bank, will usually think it unwise to lend money to a firm whose debt exceeds the net worth.

To determine the debt-to-tangible-net-worth ratio, use this formula:

$$\text{Debt-to-Tangible-Net-Worth} = \frac{\text{Current Liabilities}}{\text{Tangible Net Worth}}$$

**WHAT IS A NET-SALES-TO-
WORKING-CAPITAL RATIO?**

A *net-sales-to-working-capital ratio* shows how many dollars of sales the business makes for every dollar in working capital owned. A low ratio may indicate that working capital is not being used efficiently to generate sales. On the other hand, an extremely high ratio may signal that working capital is not sufficient for maintaining high sales volume. This ratio is subject to seasonal sales changes; evaluate it accordingly. Comparisons of similar sales periods in past years are helpful in analyzing this ratio.

To determine the net-sales-to-working-capital ratio, use this formula:

$$\text{Net-Sales-to-Working-Capital Ratio} = \frac{\text{Net Sales}}{\text{Current Assets} - \text{Current Liabilities} \text{ (Working Capital)}}$$

**WHAT IS A NET-INCOME-TO-
NET-SALES RATIO?**

A measure of profitability, a *net-income-to-net-sales ratio* shows how much net income, or net profit, comes from every dollar of net sales. It indicates the operating efficiency of the business. This ratio can signal increasing expenses; thus review it frequently. It is perhaps the most important ratio for a new business owner to consider.

To determine the net-sales-to-working-capital ratio, use the following formula:

$$\text{Net Income to Net Sales} = \frac{\text{Net Income}}{\text{Net Sales}}$$

**WHAT ARE BREAK-EVEN
ANALYSIS COMPONENTS?**

Break-even analysis describes the point at which income equals total costs. The first two items to be calculated are the fixed and variable costs. Fixed costs do not vary with the level of business activity. Examples include administrative salaries, property insurance, depreciation of equipment, and rent.

Variable costs vary directly with the volume of activity. Direct labor and materials are examples. They double if production doubles, and drop to zero if production is zero.

Semivariable costs change with the level of business activity, but not in direct proportion. Office equipment or supervisors' salaries might be examples of semivariable costs. Such costs are usually about the same regardless of the level of output.

**HOW IS A BREAK-EVEN POINT
COMPUTED?**

Computing the break-even point is one technique to determine when your business will begin to make a profit. The break-even point tells you how much business your firm will need to do to break even, that is, to operate with neither a profit nor a loss.

To find the break-even point, you must first determine the fixed costs and variable costs. Once these have been calculated, the following formula can be used to find the break-even point (volume of business):

$$\text{Break-Even Point} = \frac{\text{Total Fixed Costs}}{\text{Selling Price (Per Unit)} - \text{Variable Cost (Per Unit)}}$$

For example, assume that your total fixed costs are \$15,000. You are selling a product for \$100 a unit. The variable cost per unit is \$25. In order to break even, you need to sell 200 units.

$$\text{Break-Even Point} = \frac{\$15,000}{\$100 - \$25} = 200 \text{ Units}$$

Thus, if you sell less than 200 units at these costs, you will have a loss. Of course, you will want to do better than break even. If you want to make a profit, you will have to sell more than 200 units at these costs.

**WHAT INFORMATION IS
OBTAINED FROM BREAK-
EVEN ANALYSIS?**

Break-even analysis can help you compare cost to profits at different volumes of sales. You can use break-even analysis to see how profitable different items are in a line of products that you sell. It can answer such questions as: Which items are most profitable? Which are least profitable? Have any items passed their popularity peaks (shown decreasing profits)? How many units of a new product must be sold before it begins to bring in a profit?

A break-even chart shows visually the relationship of costs to profits at different sales volumes. Figure 1 is a break-even chart showing the break-even point, and also the profits and losses for other volumes of sales. It is plotted for a manufacturing company with costs for one of its products figures as:

- Total fixed costs - \$100,000
- Variable costs - \$50 per unit
- Selling price - \$100 per unit.

Figure 1 shows that profits depend on the number of units sold only when the price and cost patterns do not change. Each of the factors that affect profit can be varied. If you could find a way to reduce fixed costs, you would be able to lower the break-even point. Or, if you could reduce variable costs, this would cause the total cost line to rise less rapidly. You could also raise or lower prices. An increase in price would lower the break-even point. An inventor once said that if he could only sell one of his inventions for \$500,000, he would make a tidy profit.

Analysis of figure 1 reveals these facts about the break-even point:

- The larger the loss area, the greater the down-side risk.
- The larger the profit area, the greater the up-side potential.
- The larger the fixed costs, the higher the risk (increased loss area).
- The larger the proportion of variable costs, the higher the risk (increased loss area and decreased profit area).

**HOW CAN MICROCOMPUTER
APPLICATIONS ASSIST IN
FINANCIAL ANALYSIS AND
MANAGEMENT?**

Sometimes a manager/owner is reluctant to use a computerized system to analyze or manage the financial aspects of a business. This reluctance may be due to a feeling of inadequacy, inexperience, or lack of knowledge. Recently, new software programs such as VisiCalc, SuperCalc, T-Maker II, and TARGET, have been developed. These financial analysis programs are designed for nontechnical users.

Programs of this type are essentially an electronic "spread sheet" or "working paper" of rows and columns. These rows and columns are displayed on the microcomputer viewing screen. You may insert any type of business data into the specific rows or columns. For example,

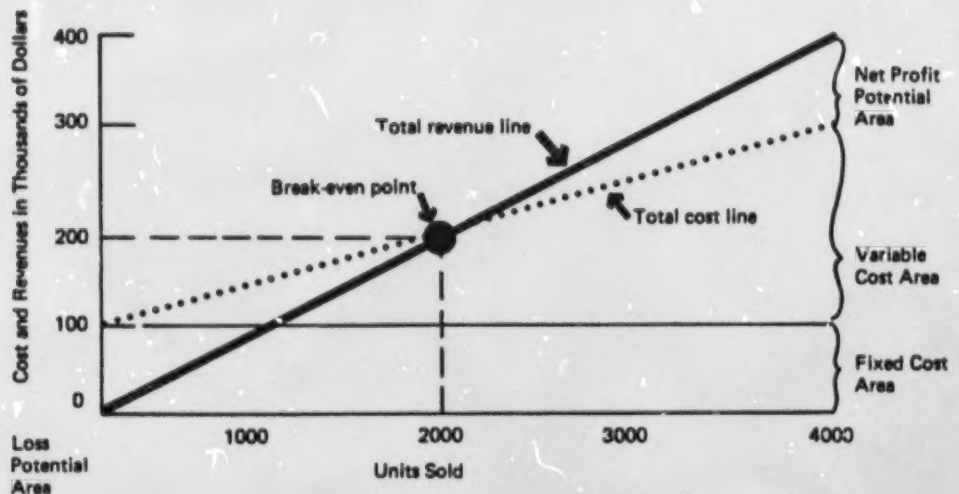


Figure 1. Break-Even Volume (Fixed costs, \$100,000; variable costs, \$50 per unit; selling price, \$100 per unit)

NOTE: Adapted from Small Business Administration, *A Handbook of Small Business Finance*. Washington, D.C.: U.S. Government Printing Office, n.d., p. 31-36.

a profit and loss statement of your business may be recorded on the microcomputer viewing screen. Variables, such as the percentage of gross margin, may be changed. When such changes are made, the software program will instantly recalculate other elements on the profit and loss statement. You can thereby quickly determine the net profits realized from various gross margins through this program. The program can maintain several rows of columns which enables you to review or project different month's operations on the profit and loss statement.

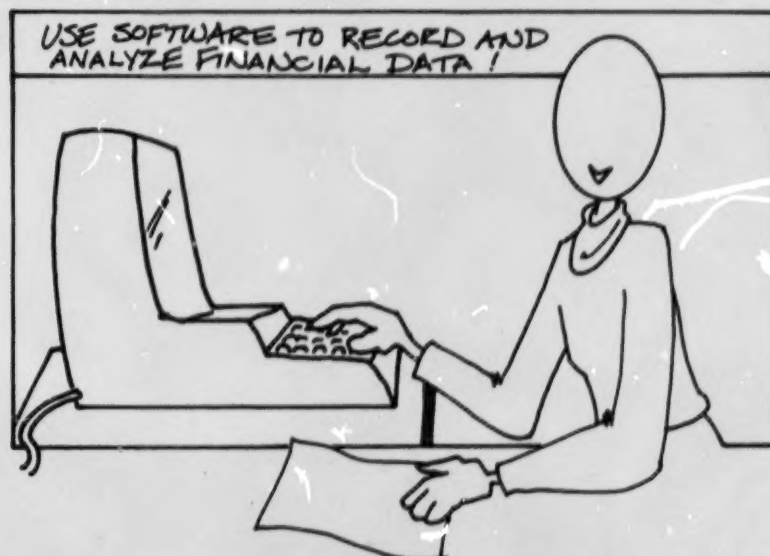
A basic example of how such software can be used to record and analyze financial data is illustrated as follows:

Alice sells apple pies from her kitchen. She sells them mostly to restaurants that buy them by the dozens each week. Alice wants to forecast sales under a variety of circumstances for the next few months.

To start, she enters some basic information about her pie-making business—essentially, an income statement for one month. She knows that in a typical month she sells 650 pies at an average price of \$5 per pie. She then details on the computer the costs of doing business: flour, sugar, apples, butter; her two part-time assistants, who earn \$3 an hour each; her delivery costs, and the ads she places in several trade journals. On the bottom line is her net profit of \$1.90 per pie, or \$1,235 for the month.

So far, it has taken Alice about five minutes to plug in the various components and to describe the formula for calculating net profit: the variables (the pie ingredients and delivery costs), which change with the number of pies sold, and the constants (the ads and her staff), which she must pay whether or not she sells any pies. In business, however, nothing is certain; prices fluctuate and business gets better and worse. For Alice, what if a bad apple harvest raises the price of her fruit by 60 percent? What if the number of pies sold were to double, but her staff were given raises to \$3.75 an hour? What if advertising rates increased and the bottom dropped out of the apple-pie market?

To answer such "what if" questions, Alice merely changes the related piece of data—the price of apples, for example, or the number of pies sold. In seconds, the software program refigures all the costs and computes a new net profit.



Now, none of this may seem revolutionary for calculating a month's worth of apple pies, but consider other "what if" scenarios facing the typical modern business. The apple-pie example included a dozen variables and a half-dozen assumptions. The beauty of the VisiCalc type of program is that it can work with dozens of variables and hundreds of assumptions. The results: a ten-year income and cash-flow statement for a proposed shopping mall; a three-year profit-and-loss statement for a retail store selling hundreds of items; a cost-efficiency study of a ten-person firm, or just about any other projections or analyses that you can dream up.

Other types of microcomputer programs are available for financial analysis and management. Programs pertaining to productivity, payroll, investments, inventory control, ratio analysis, etc. may be obtained from commercial sources. A potential user of such programs should contact a reputable microcomputer supplier; review microcomputer periodicals, and texts; or consult with manager/owners using microcomputers in similar businesses.

ACTIVITIES

Do you feel knowledgeable enough about what it takes to become an entrepreneur? Will you be able to put some of the skills into practice? The following activities will help you experience some of the real-life situations of entrepreneurs.

INDIVIDUAL ACTIVITY

The following cost structure of the Johnson Business was obtained from last year's profit and loss statement:

Selling Price = \$100 per unit
Variable Costs = \$60 per unit

Sales	\$100,000
Fixed Costs	\$20,000
Variable Costs	80,000
Profit	\$ 20,000

On a piece of graph paper:

- (a) Plot (and identify) the sales line.
- (b) Plot (and identify) the "total cost" line.

Determine (both by inspection of the break-even chart, and by calculation):

- (c) Variable cost per dollar of sales: \$ _____
- (d) Break-even point (units): _____
- (e) Profit (or loss) at \$50,000 sales volume: \$ _____
- (f) Profit at \$80,000 sales volume: \$ _____
- (g) Profit at \$100,000 sales volume: \$ _____
- (h) Profit at \$120,000 sales volume: \$ _____

GROUP ACTIVITY

In groups of two to three persons, prepare a list of commonly used business ratios. Ask your instructor to help you identify a successful business manager or accountant in your community who uses ratios. Interview this person to obtain information about which ratios are used. Also ask these questions: What data is required to compute the ratios? How are the ratios used in analyzing the business operations? What business planning or follow-up activities take place in the business as the result of ratio analysis? Are such ratios prepared with computer assistance? Report on your findings to the rest of your class members.

CASE STUDY

Read and analyze the following case study. Computing the ratios will give you practice in using them. On a separate piece of paper, number from 1 to 6. Write each ratio on this paper as you compute it. Betty Jones is opening Jones Gift Shop. The shop, located in a New

Jersey resort town, is a seasonal business open only in the summer. The store site is rented. Betty selected the site herself. She then became a part of a national franchise organization by paying the one-time membership fee of \$1,000 plus yearly dues of \$100. The organization provides advertising and other management assistance services.

Betty began her business venture with \$10,000. She made several trips to see a friend experienced in business. On her first trip she presents her friend with the following information.

1. Owner's cash investment	\$ 6,000
2. Credit from suppliers	3,000
3. Note (payable to an individual or to a bank)	1,000
TOTAL	\$10,000

Suppose that you are this friend. Compute the following ratios where indicated for Betty. Refer to the text of this unit for the ratios you need. Using this information, you develop the projected balance sheet shown in Table 2, which shows that only \$4,000 of the original \$10,000 is to go for inventory. The remaining \$6,000 is earmarked for working capital, equipment, and the franchise fee.

During this first meeting, Betty begins to think of the balance sheet as a financial picture of the shop as of a specific date. Before she leaves, you construct ratios based on the opening-day figures. The current ratio is greater than two to one (which is the commonly accepted minimum). You compute this ratio to be ().

The acid-test ratio, a ratio that reflects Jones' ability to pay current debts, is a favorable one (). You also calculate a debt-to-tangible-net-worth ratio by measuring the \$4,000 debt against a tangible net worth of \$5,000 (\$6,000 minus the \$1,000 franchise fee). After allowing for intangible assets, you come up with a () ratio. This, too, is a favorable ratio. It indicates that Jones has more invested in her business than her creditors do.

During this first meeting, you also discuss the income Betty hopes to earn through the shop. Betty recognizes the importance of establishing financial goals. "To do this we should prepare a profit and loss statement for the shop," you advise. You explain that a projected profit and loss statement also does the following:

- Sets goals and timetables for reaching the goals
- Describes anticipated trends in profits or inventory turnover
- Relates the profits of the business to the investment in the business
- Becomes a base or a benchmark which, when compared to actual figures, can be used to adjust projections

TABLE 2
JONES GIFT SHOP
Projected Balance Sheet

ASSETS	Opening Day	End of Year 1	End of Year 2	End of Year 3
Cash	3,000	2,000	2,000	4,900
Inventory	4,000	5,000	6,000	7,000
Accounts Receivable	-----	2,600	2,900	3,000
Total Current Assets	7,000	9,600	10,900	14,900
Equipment	2,000	1,500	1,000	500
Building	-----	-----	-----	-----
Other (Franchise Fee)	1,000	1,000	1,000	1,000
Total Fixed & Other	3,000	2,500	2,000	1,500
Total Assets	10,000	12,100	12,900	16,400
LIABILITIES				
Accounts Payable	3,000	3,700	4,000	4,500
Other Debts Due within 1 year	-----	-----	-----	-----
Total Current Liabilities	3,000	3,700	4,000	4,500
Long-Term Debt	-----	-----	-----	-----
Notes Payable to Others	1,000	500	-----	-----
Total Long-Term Debt	1,000	500	-----	-----
Total Debt	4,000	4,200	4,000	4,500
Owner's Equity	6,000	6,900	8,900	11,900
Total Liabilities & Owner's Equity	10,000	12,000	12,900	16,400
Current Ratio	2.33:1	2.59:1	2.72:1	3.31:1
Acid-Test Ratio	1:1	1.24:1	1.22:1	1.75:1
Debt to Tangible Net Worth	.8 :1	.7 :1	.5 :1	.24:1

TABLE 3
JONES GIFT SHOP
Projected Profit and Loss

	First Year	Second Year	Third Year
Gross Sales	22,500	30,000	34,000
Less: Returns—Allowances	1,500	2,000	2,500
Net Sales	21,000	28,000	31,500
Cost of Goods Sold:			
Beginning Inventory	4,000	5,000	6,000
Plus Purchases—Freight	10,000	14,000	15,000
Minus Ending Inventory	5,000	6,000	7,000
Total Cost of Goods Sold	9,000	13,000	15,000
GROSS PROFIT (MARGIN)	12,000	15,000	16,500
Less: Selling Expenses:			
Sales Force Payroll	2,500	3,500	4,000
Commissions	-----	500	750
Advertising	3,000	2,500	2,000
Operating Expenses:			
Utilities	900	1,400	1,650
Rent	3,600	4,000	4,250
Other	600	600	600
Total Expenses	10,600	12,500	13,250
NET PROFIT BEFORE TAXES	1,400	2,500	3,250
Less Income Taxes	-----	-----	250
NET PROFIT AFTER TAXES	1,400	2,500	3,000
Average Inventory Turnover	5.0	4.45	5.23
Average Markup or Margin (%)	53.3%	53.5%	48.5%
NET PROFIT AS % OF SALES	6.6%	8.3%	9.5%
NET PROFIT AFTER TAXES AS % OF OWNER'S EQUITY	10.4%	36.2%	33.7%

You complete the three-year profit and loss projection for the gift shop shown in table 3. You meet with Betty again and you discuss the projection, referring at times to the projected balance sheet (table 2) developed during the first meeting.

You compute the current ratio at the end of the second year to be (____). The quick ratio or ability to pay all current debts has improved considerably, and the debt to net worth ratio has declined to (____). Profits are being invested in inventory and the margin or average markup has continued to average over 50 percent.

At the end of the third year, the business appears to be prospering, as the owner's original investment has now increased to \$11,900 from \$6,000. This reflects the profits from three years of operation. In Table 3 note that first year sales are estimated to be \$22,500, which increased to \$30,000 in the second year and \$34,000 in the third year. This projected income statement is very important, as it serves as a plan against which actual income and expenses can be compared.

Since the gift store business has a relatively high markup (over 50 percent) it will probably have a low inventory turnover rate. High markup businesses are usually characterized by low turnover of inventory, as the higher priced merchandise usually sells at a low rate. Average inventory turnover is computed by using this formula:

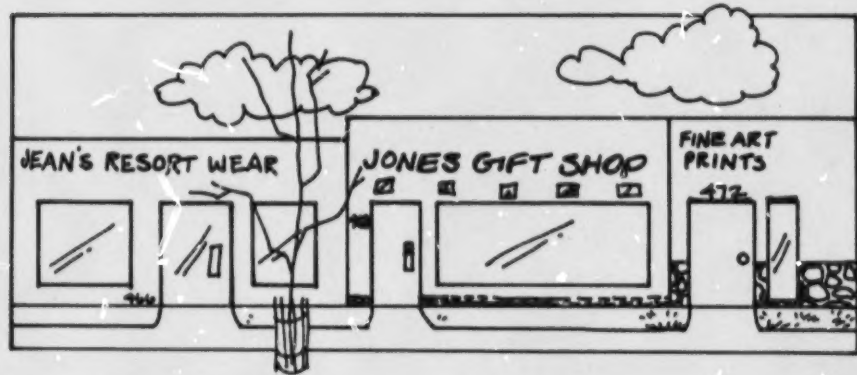
$$\frac{\text{Gross Sales}}{\text{Average Inventory}} = \frac{\$22,500}{\$4,000 + \$5,000/2}$$

Since the average inventory for the year is \$4,500, based on annual sales of \$22,500, the inventory is turning over or being replaced on the average of only (____) times a year. You prepared this projection knowing that most businesses characterized by low inventory turn over are often plagued by inventory obsolescence due to style or fad changes. Since the business is a gift store, you advise Betty to keep this in mind when planning inventory. "Stock those items that may decline in value below the cost paid for them at a minimum. Since one of your objectives in financial planning is control over the amount of debt and its relationship with the total assets of the business," you advise, "the importance of arriving at both the current ratio and debt-to-net-worth ratios quickly cannot be underemphasized."

Table 2 shows that at the end of the second year, the business has expanded somewhat, since assets now total \$12,000. The current ratio has improved because first-year profits of \$1,400 have been put back into the business.

Betty computes her net profit after taxes as a percentage of equity. By doing this, she learns how much her investment is making. She

decides that if this rate of return ever drops to a point where she questions her reasons for being in her business, she will ask you to help her do another analysis of the profit and loss items.



ASSESSMENT

Directions: Read the following assessment questions. When you feel that you are prepared to respond to them, ask your instructor to assess your competence:

1. List four requirements for successful financial management.
2. List four ways of achieving financial control by recording cash receipts.
3. List procedures that can be used to compute cash flow patterns during the year.
4. Identify and explain four signs of cash flow problems.
5. Give three examples of long-range cash flow needs.
6. Identify what an owner's equity financial statement reports.
7. List four key ratios used to analyze financial statements.
8. What do the following financial ratios indicate?
 - a. Current ratio
 - b. Acid-test ratio
 - c. Debt-to-net-worth ratio
 - d. Net-sales-to-working-capital ratio
 - e. Net-income-to-net-sales ratio
 - f. Operating expense ratios
9. Describe the formula for computing a break-even point.
10. Identify three marketing questions that can be answered from a break-even computation.
11. Identify four applications of microcomputers for financial analysis and management.

NOTES

- ¹The Robert Morris Associates. *Annual Statement Studies*. Philadelphia: The Robert Morris Associates.
- ²Brock, Horace R.; Palmer, Charles E.; and Archer, Fred C. *Accounting: Basic Principles*. 3d ed. New York: McGraw-Hill Book Co., 1974.
- ³Dun and Bradstreet. *Key Business Ratios*. New York: Dun and Bradstreet, 1981.
- ⁴Krentzman, Harvey C.; White, L.T.; and Schabacker, Joseph C. *Techniques and Strategies for Effective Small Business Management*. Fairfield, CA: The Entrepreneur Press, 1979., pp. 98-101.
- ⁵Nelson, R.E.; Leach, J.A.; and Scanlan, T.J. *Owning and Operating a Small Business*. Springfield, IL: State Board of Education, Illinois Office of Education, 1976.
- ⁶*Understanding Financial Statements*. Small Business Reporter Series, San Francisco: Bank of America, 1980.

We thank the above authors for permission to reprint from their work.

OTHER SOURCES USED TO DEVELOP THIS UNIT

- Broom, H.N., and Longenecker, J.G. *Small Business Management*. 5th ed. Cincinnati, OH: South-Western Publishing Co., 1979.
- Ely, V.K., and Barnes, M.T. *Starting Your Own Marketing Business*. New York: McGraw-Hill Book Co., 1978.
- Everard, K.E., and Shilt, B.A. *Business Principles and Management*. Cincinnati, OH: South-Western Publishing Co., 1979.
- Ferner, J.D. *Successful Time Management*. New York: John Wiley & Sons, 1980.
- Hodgetts, R.M. *Effective Small Business Management*. New York: Academic Press, 1982.

For further information, consult the lists of additional sources in the *Resource Guide*.

PACE

- Unit 1. Understanding the Nature of Small Business
- Unit 2. Determining Your Potential as an Entrepreneur
- Unit 3. Developing the Business Plan
- Unit 4. Obtaining Technical Assistance
- Unit 5. Choosing the Type of Ownership
- Unit 6. Planning the Marketing Strategy
- Unit 7. Locating the Business
- Unit 8. Financing the Business
- Unit 9. Dealing with Legal Issues
- Unit 10. Complying with Government Regulations
- Unit 11. Managing the Business
- Unit 12. Managing Human Resources
- Unit 13. Promoting the Business
- Unit 14. Managing Sales Efforts
- Unit 15. Keeping the Business Records
-  Unit 16. Managing the Finances
- Unit 17. Managing Customer Credit and Collections
- Unit 18. Protecting the Business

Resource Guide

Instructors' Guide

Units on the above entrepreneurship topics are available at the following three levels:

- Level 1 helps you understand the creation and operation of a business
- Level 2 prepares you to plan for a business in your future
- Level 3 guides you in starting and managing your own business



The Ohio State University